

ADMINISTRATIVE APPROVAL NO. AIO 10B.01

Mr. Chris West
BP Exploration (Alaska) Inc.
PO Box 196612
Anchorage, AK 99519

Re: Application to Amend Area Injection Order No. 10B

Dear Mr. West:

The Alaska Oil and Gas Conservation Commission (“Commission”) has received your correspondence, dated September 19, 2003, requesting an amendment to Area Injection Order (“AIO”) No. 10-B to include enhanced recovery operations in the Ugnu Formation within the area bounded by AIO 10B. The project as described will assess the feasibility of a secondary recovery process using water in the Ugnu Formation. It has not yet been determined whether the targeted portions of the Ugnu Formation are within the Schrader Bluff Pool, which is currently subject to AIO 10B.

Concurrent with development of the Kuparuk Oil Pool within the S-Pad area of Milne Point Unit (“MPU”), opportunities to test the Ugnu Formation have been identified. BP Exploration (Alaska) Inc. (“BPX”) is proposing to determine whether primary and secondary recovery methods are viable in the Ugnu Formation through a drilling and water injection program. Several well locations have been identified where potential lower oil viscosity makes the formation amenable to testing completion and recovery concepts. Successful tests of the recovery processes may lead to further delineation and development of the Ugnu Formation in the S-Pad area. BPX has reviewed injection parameters, fracture parameters, confinement, well mechanical condition within the pilot area, estimated initial water injection requirements, and made preliminary recovery estimates. This project will test theories, concepts and feasibility of typical recovery processes not yet proven to be effective in the Ugnu Formation. As such, the uncertainty, limited nature of the initial development, and objectives of the project qualify it as a pilot project. The area surrounding MPU S-Pad falls within the Aquifer Exemption granted by EPA on May 11, 1984 (40 CFR 147.100-104 and application letter to Harold Scott - EPA from Thomas R. Fink - Arco, December 8, 1983).

Conservation and Area Injection Orders have not yet been established for the Ugnu Formation within the MPU. In accordance with 20 AAC 25.450 (b), the Commission has discretionary authority to approve "...pilot projects for enhanced recovery using a technology not proved feasible under conditions in which it is being tested may be operated with less stringent requirements ... if the project will not result in an increased risk of fluid movement into freshwater sources."

The Commission has reviewed the subject application and finds the project as described fits the conditions of a pilot project as cited in 20 AAC 25.450(b). The initial scope and goals of the project are clearly defined to allow technical evaluation of the process. BPX has outlined operating parameters consistent with containment of injection and prevention of extraneous movement of injected fluids. Preliminary studies indicate the potential to recover additional oil with successful implementation of the project. Reservoir surveillance, operating parameter surveillance, and mechanical integrity tests will demonstrate performance of the enhanced oil recovery project, disclose possible abnormalities and indicate integrity problems. There is not enough technical information and evaluation at this time to justify a project for the entire MPU area; however, the S-Pad development area will allow opportunities to evaluate the process. The entire S-Pad development is contained within the aquifer exemption area noted above. The project as described will not cause waste nor allow increased risk of fluid movement outside the target interval.

The Ugnu Formation injection pilot project is approved subject to the following conditions:

1. Water injection into the specified interval of the Ugnu Formation for evaluation purposes is approved for a period of three years, until October 31, 2006, within the following affected area:

Township	Sections
T12N, R10E	1, 2, 11, 12
T12N, R11E	5, 6, 7, 8
T13N, R10E	34, 35, 36
T13N, R11E	31

Similar Ugnu Formation injection projects planned for other portions of the MPU must be reviewed and approved separately by the Commission.

2. The Ugnu interval affected by this pilot injection project is correlative to the stratigraphic section from 3890-4150' MD in well MPG-01.

3. An annual project technical review is required to document project performance and progress toward proving feasibility of the process including, but not limited to:
 - a. project performance (reservoir pressure and production response) and objectives achievement;
 - b. injection performance and response (profile surveys, rate and pressure relationships, injection tests, injection allocation and plugging indications); and
 - c. technical issues, anomalies and changes in project scope.
4. An injectivity step rate test is required to establish fracture and breakdown gradient of the Ugnu Formation. Data and results shall be filed with the Commission upon completion of the test.
5. Project surveillance, integrity testing and other requirements of AIO 10B shall ensure adequate technical data and operational surveillance to monitor containment of injected fluids.
6. Injection and production volumes shall be reported to the Milne Point, Ugnu Undefined Oil Pool, using field/pool code 525160.
7. Water injectors may be completed to allow for injection in multiple pools within the same wellbore. Completions may employ multiple packers or other methods that allow the injection to each pool to be controlled, allocated or estimated in a technically sound manner.
8. An opportunity for public hearing will be scheduled at the end of the pilot project to weigh the benefits of further pilot operations or create rules to guide expansion of the project within the Ugnu Formation.
9. The rules established in AIO 10B apply to operations authorized under this administrative approval.

DONE in Anchorage, Alaska this 13th day of November 2003.

Sarah Palin
Chair

Dan Seamount
Commissioner